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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,801	07/03/2003	H. Peter Anvin	TRAN-P074	7369
7590	12/16/2005		EXAMINER	
WAGNER, MURABITO & HAO LLP Third Floor Two North Market Street San Jose, CA 95113			ELMORE, STEPHEN C	
			ART UNIT	PAPER NUMBER
			2185	

DATE MAILED: 12/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/613,801	ANVIN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Stephen Elmore	2185	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 03 July 2003.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-24 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-24 is/are rejected.  
 7) Claim(s) 23 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

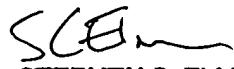
#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 03 July 2003 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
     1. Certified copies of the priority documents have been received.  
     2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
     3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
**STEPHEN C. ELMORE**  
**PRIMARY EXAMINER**

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
     Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
     Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

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#### **DETAILED ACTION**

1. This Office action responds to the application filed July 3, 2003.
2. Claims 1-24 are presented for examination.

#### ***Drawings***

3. The drawings are objected to because:
  - a. Figures 2, 4 and 5 do not meet drafting requirements for size and readability of labels and reference characters;
  - b. Figure 2 is an unclear reproduction, it is not possible to read all labels and characters;
  - c. Figure 3 the label "pcache" cannot be found in the disclosure;
  - d. Figure 7, the input to the element 15 is missing a label.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

**No new matter should be entered.**

#### ***Specification***

4. The disclosure is objected to because:
  - a. at page 8, line 26, in the language, "the physical address is checked by some other machine process" it is uncertain what Applicant means by "checked";

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b. the detailed description of Figure 3 does not mention the "pcache" label which appears in the figure.

**Appropriate correction is required.**

***Claim Objections***

5. Claim 23 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 22 already contains the limitation directed towards the circumstance when the entry is not stored in the TLB.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 2-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are indefinite because:

They recite limitations which have insufficient antecedent basis,

- a. Claim 2 recites the limitation "the manner" in line 2;
- b. Claim 6 recites the limitation "the attribute" in line 2;
- c. Claims 8 and 15 recite the limitation "the virtual address to physical address translations" in lines 3-4;
- d. Claims 8 and 15 recite the limitation "the entries" in line 4, line 3;
- e. Claim 8 recites the limitation "the attribute entry" in line 7;
- f. Claim 9 twice recites the limitation "the attribute entry" in lines 2-3;
- g. Claims 11 and 18 recite the limitation "the attribute entries" in line 1;
- h. Claims 13, 14, 20 and 21 recite the limitation "the data" in line 1;
- i. Claim 15 recites the limitation "the attribute entry" in line 5;

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- j. Claim 16 twice recites the limitation "the attribute entry" in line 2;
- k. Claim 19 recites the limitation "the physical page" in line 2;
- l. Claims 20 and 21 recite the limitation "the physical address" in line 2;
- m. Claim 22 recites the limitation "the entries" in line 5;
- n. Claims 22, 23 and 24 recites the limitation "the TLB";

Additionally, they are indefinite because:

- o. Claim 23 recites redundant language in "wherein the attribute cache is configured as an attribute cache";
- p. Claims 7, 10 and 17, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: these claims structurally recite "a corresponding plurality of attribute entries" however, the claim is missing language necessary to indicate the "correspondence". For example, to what does the plurality of attribute entries correspond -- since it doesn't make sense that they would correspond to the speculative attribute lookups;
- q. the remaining claims inherit the deficiencies of the preceding claim in the claim dependency chain.

#### *Claim Rejections - 35 USC § 102*

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Pedneau, US Patent 6,189,074.

Pedneau teaches the claimed method for caching attribute data for matching attributes with physical addresses, comprising:

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storing a plurality of attribute entries in a memory [1003, Fig. 8], the memory configured to provide at least one attribute entry when accessed with a physical address, wherein the attribute entry provided describes characteristics of the physical address, see Figs. 8, 9 and 10, and see col. 6, line 9 - col. 8, line 37, especially, col. 6, lines 38-43, and col. 7, lines 1-16;

As to claim 2, the claimed attribute logic functionality is inherently taught by the reference by the use of the attribute fields [PTE attributes, col. 7, line 1] in the operation of the memory management unit described at col. 7, line 57 - col. 8, line 14, to utilize the cacheability attribute in the performance of memory operations on physical addresses being used by the computer system.

***Allowable Subject Matter***

10. Claims 8-24 appear to be allowable over the prior art of record if rewritten or amended to overcome the rejection(s) under 35 U.S.C. § 112, second paragraph, set forth in this Office action.

***Conclusion***

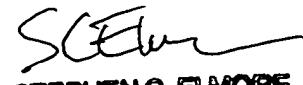
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Elmore whose telephone number is (571) 272-4436. The examiner can normally be reached on Mon-Fri from 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on (571) 272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 6, 2005

  
STEPHEN C. ELMORE  
PRIMARY EXAMINER